DOCUMENT RESUME

ED 268 756 EC 182 360

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TITLE Training Gaze Direction in Blind Children: Attitude Effects on the Sighted.
PUB DATE Apr 86
NOTE 46p.; Paper presented at the Annual Convention of the Council for Exceptional Children (64th, New Orleans, LA, March 31-April 4,1986).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Blindness; *Competence; Elementary Education; *Interpersonal Competence; *Visual Impairments
IDENTIFIERS *Gaze Patterns

ABSTRACT

The study assessed the extent to which the presence of gaze direction affected sighted raters' perceived evaluation of the competence levels of elementary-aged visually impaired children. Sighted individuals (N=160) were randomly assigned to view one of four randomized videotapes of two visually impaired children without gaze direction (pre-training skill level) and two children with gaze direction (post-training skill level). All raters viewed the same children although not necessarily in the same condition. Each videotaped sequence showed a child responding to a randomized set of questions while involved in a conversation with two adults. A mixed design, one between-one within-subjects design, was employed to assess the main effects of the one factor which was randomized (the videotape viewing groups), and the one factor which involved repeated measures (Condition 1--pre-training skill level video sequences, and Condition 2--post-training skill level video sequences). Analyses revealed that when children manifested proper gaze direction they were evaluated as having higher social competence, as being more intelligent, and as having a greater ability to compete in the sighted world as an adult. (Author/CL)

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TRAINING GAZE DIRECTION IN BLIND CHILDREN: ATTITUDE EFFECTS ON THE SIGHTED

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ABSTRACT

This study assessed the extent to which the presence of gaze direction affected sighted raters' perceived evaluation of the competence levels of elementary-aged visually impaired children. 160 sighted individuals were randomly assigned to view one of four, randomized videotapes of two visually impaired children without gaze direction (pre-training skill level) and two children with gaze direction (post-training skill level). All raters viewed the same children although not necessarily in the same condition. Each videotaped sequence showed a child responding to a randomized set of questions while involved in a conversation with two adults.

A mixed design, one between-one within-subjects design, was employed to assess the main effects of the one factor which was randomized (the videotape viewing groups), and the one factor which involved repeated measures (Condition 1--pre-training skill level video sequences, and Condition 2--post-training skill level video sequences). Analyses revealed that when children manifested proper gaze direction they were evaluated as having higher social competence, as being more intelligent, and as having a greater ability to compete in the sighted world as an adult. These three research hypotheses were supported at the $p < .0001$ alpha level.

Social theorists tend to agree that learning appropriate social behaviors such as facial expressions, gestures and other social interaction skills seem to be linked to imitation (Bandura, 1977; Bandura & Walters, 1963; Miller & Dollard, 1941; Rotter, 1972; Skinner, 1953). Lack of visual imitation appears to be a contributing factor for deviant social patterns reported in visually impaired children and adults (Kramer, Hursh, & Foreman, 1975; Myers & Deibert, 1971; Paloutzian, Hasazi, Streifel, & Edgar, 1971; Wesoloski, & Zawlocki, 1982; Rapoff, Altman, & Christopherson, 1980).

Nonstandard social behaviors of the visually impaired may be negatively influencing their interaction with the sighted world. Research has indicated that the mere presence of a disabled person in interpersonal contact can lead to discomfort (Davis, 1961; Rusalem, 1950; Whiteman & Lukoff, 1964), and what Goffman (1963) has termed, "interaction strain." Subjects interacting with apparently physically disabled confederates demonstrated less variability in their behavior, expressed opinions less representative of their actual beliefs, and terminated interaction sooner than subjects interacting with physically normal confederates

(Kleck, Ono, & Hastroff, 1966). Results from a verbal learning and associative clustering task which was conducted in the presence of a blind or sighted individual revealed that subjects reported their performances impaired by the presence of a blind individual when in actuality, it was not affected (Jones, 1970). Chevigny and Braverman (1950) reported that some people perceive disabled individuals, as well as minorities, as possessing special characteristics. In general, these characteristics tend to be the imputation of inferiority.

One clear difference in the social interactive style of the sighted and the visually impaired is the use of eye contact. For the sighted eye contact serves the role of regulating and influencing conversation, projecting attributes and collecting information (Argyle, Lalljee & Cook, 1968; Ellsworth & Ludwig, 1972; LeCompte & Rosenfeld, 1971; Weiner, Devor, Rubinow, & Geller, 1972). Obviously, eye contact per se is not possible for the blind. However, the blind's counterpart, gaze direction--turning the head to match the plane and direction of a speaker's face--can be trained. The few studies which have modified gaze direction have been characterized by case studies (Raver, 1984; Sanders & Goldberg, 1977; Toonen & Wilson, 1969), employed a small number of subjects, or targeted gaze direction as one component of a more comprehensive social training program

(Bonfanti, 1979; Tucker, 1975; Van Hasselt, Simon & Mastanuono, 1984).

The majority of gaze direction training and research has focused on the adolescent or adult client. For example, Bonfanti (1979) remediated the social differences between congenitally and adventitiously blind adults by training congenitally blind subjects in appropriate usage of nonverbal and verbal communication patterns. Bonfanti's training modified eye contact (gaze direction), touch behavior, gestures, postural symmetry, and voicing. Significant differences were reported between the experimental and control groups. Results suggested that blind adults can be made aware of socially deviant patterns and alter them when given specific feedback and training.

Since the important regulatory functions of eye contact are distorted or lost in interaction with the blind, the lack of eye contact may encourage the sighted to project certain attributes onto visually impaired interactants. Although the differences between the social behaviors of the sighted and the blind are well documented (American Foundation for the Blind, 1974), no consensus exists on the extent to which blind children and adults should be trained to behave like the sighted. Consequently, research is needed to document the extent to which the lack of eye contact/gaze direction influences the visually impaired's interaction with the

sighted, and which attributes the sighted may be associating with the absence of this skill. The present investigation hypothesized that sighted individuals would interpret the lack of gaze direction in blind children an indicator of low social competence, an indicator of low intellectual abilities, and as an indicator of being less equipped to compete in a sighted world in adulthood.

METHOD

This research was conducted in two phases. In Phase 1 four blind children were videotaped in pre-and post-training levels of gaze direction training. In Phase 2 these videotaped sequences were shown in ramdomized order to 160 raters who evaluated the children on social, intellectual and competitive variables.

Phase 1. Gaze direction training was conducted by using physical prompting, verbal feedback and social reinforcement. (Readers are referred to Raver (1984) for specifics on the training program). Training was continued until a child displayed 100 percent mastery for three consecutive days. Gaze direction was defined as moving the head in the direction of a trainer when spoken to, or when addressing the trainer, while holding the head in a proper plane for conversation. To be rated as a correct response, the child had to match the trainer's location and/or plane within 3

seconds of a change in the trainer's location and/or plane.

The children used in Phase 1 were between the ages of 6-and 8-years. They had normal intelligence (IQs ranged from 92-120), low levels of spontaneous gaze direction (no more than 2 out of 15 occurrences during an eligibility evaluation), and had no regularly manifested blindisms. All children were blind due to Retrolental Fibroplasia. The one male child was Black. Two of the other female children were Hispanic, and one was Caucasian. Variables of physical attractiveness, sex, age, intellectual functioning, attractiveness, and verbal skills were controlled by using the same child for both the pre-training and post-training videotaped sequences.

The pre-and post-training videotaped sequences were made to appear identical. Adult interviewers wore the exact hair styles and clothing for both filming sessions. The distance of the overhead microphone (55 inches), the placement and focus of the video camera (10 feet), the distance between the camera and the chair set-up (110 inches), and the distance between the interviewers' and the child's chairs (13 1/2 inches) were controlled exactly to produce identical filming results. Two overhead lights that had been replaced by the time of the post-training filming session were removed to keep the lighting the same as the earlier session.

Prior to all videotaping sessions childen were groomed

so that they appeared to be of comparable tidiness. No dark glasses were worn by the children. All distracting qualities of the room (pictures on the walls, environmental noise, etc.) were removed from the video filming location. To increase similarity between the filming times, a blue studio curtain was employed as a backdrop.

Pre-Training Videotaping. Before gaze direction training was instituted in Phase I pre-training videotaped sequences were filmed. For these sessions the two interviewers, one male and one female, and a child sat in chairs within a conversational distance of 3 feet from one another. The interviewers chairs were placed in front and to the sides of a child's chair, forming a "v", so the child had to turn his/her head to face an interviewer. The interviewers were filmed in profile in the videotapes while a child was seen in a frontal view.

The interviewers randomly asked a child 15 general conversational questions which required brief responses (refer to Table 1). Intermittently the interviewers made casual acknowledgements to a child's response such as, "That sounds fun," and "I see." When necessary an interviewer restated a question until a child began to respond. Because all children produced responses of comparable length and quality no need to control for length of responding was found.

Insert Table 1 about here

To diffuse interviewer-child interaction effect that might threaten external validity (Cook & Campbell, 1979), the interviewers spent one day observing and interacting with each child in their classrooms before making the pre-training videotape sequence. In this way all children were equally comfortable with the interviewers for the first videotaping sequence.

Post-Training Videotaping. The post-training video filming procedures were identical to those utilized for pre-training videotaping. Videotaped sequences of the children with the newly trained appropriate gaze direction skill, responding to the same questions, in the same order used in the pre-training videotaping sequence, were made.

Phase 2. The 160 subjects for this phase of the investigation were volunteers drawn from accessible undergraduate and graduate students from a Florida university from a variety of Social Science departments. In addition, subjects were housewives, clerks, journalists, computer programmers and businessmen.

This phase utilized a mixed design, a one between-one within-subjects design (Kennedy, 1977) to gain data regarding the impact of the presence or absence of gaze direction in visually impaired children on sighted individuals' evaluation of the videotaped children's social, intellectual, and

competitive attributes. A rater's mean rating was used as the unit of analysis.

Phase I video sequences were made into four videotapes. Each prepared videotape had one sequence of each of the four children. Each videotape had two, 2-minute video sequences of two children at the pre-training skill level and two, 2-minute video sequences of two children at the post-training skill level. Sequences were randomized for order of presentation, training condition, and sex of child to minimize order effects, and to prevent patterned responses from raters.

These tapes were shown to 160 raters. The raters were randomly assigned to one of four videotape viewing groups. Each group was shown one of the four prepared videotapes. The tapes were randomly assigned to viewing groups. Therefore, each tape was viewed by 40 raters.

After viewing the first video sequence of a blind child involved in a controlled conversation with 2 adults, the video monitor was stopped and raters were asked to complete the Attribute Projection Instrument. This procedure was repeated for the other 3 sequences, so that all raters evaluated 4 children. Following the viewing of all four videotaped sequences, the raters completed Cowen, Underberg and Verrillo's (1958) Attitude To Blindness Scale.

Raters viewed the videotapes in groups of no more than 20 people per showing. This insured that no rater was farther than 20 feet from the video monitor, and that sound

quality was good. The directions for participation were read to raters. Videotapes were shown on a 25-inch color monitor.

The scores on the Attribute Projection Instrument were used as the dependent variable in Phase 2. The independent variable was the degree of gaze direction (pre-and post-training sequences) shown in the videotapes.

Instrumentation

No instruments were employed in Phase 1. In Phase 2 raters completed a 16 item instrument, the Attribute Projection Instrument, which was developed in an effort to evaluate the perceived social competence, perceived intellectual functioning, and perceived ability to compete in a sighted world. Some of the items were adapted from Hopper and Williams' (1973) semantic differential employability instrument designed to measure the intelligence, social competence, agreeableness, and self-assurance of prospective employees. Other items were generated specifically to assess the dimensions of specific interest in this study. (Refer to Table 2 for a copy of this instrument).

Insert Table 2 about here

Questions 1 through 6 and question 11 were used as an index of a child's social competence (Subscale 1). Social competence was defined as the child's perceived ability to

influence, respond, and mutually socially participate at a level consistent with most children his/her age. Questions 3, 7 and 10 were employed as an evaluation by raters of a child's intelligence (Subscale 2). Intelligence was defined as the child's perceived overall intellectual functioning (Scheurele, Guilford & Garcia, 1982). A child's ability to be successful in a sighted world were addressed by questions 8, 9 and 10 (Subscale 3). The ability to compete in a sighted world was defined as the perceived motivation and competitive skills needed to co-exist satisfactorily with sighted individuals. Item #16 was an open-ended question which asked what it was about the child observed that caused respondents to reply the way they did.

Numerical values were assigned to responses to each item. The range was 1 for the most socially acceptable trait to 5 for the least socially acceptable trait or skill. Each rater's response was tabulated. The items were weighted 1, 2, 3, 4, and 5 respectively. Therefore, the lower the score, the more positive a child's projected attributes.

The content validity of the Attribute Projection Instrument was established prior to the research in two ways. First, the questions were presented to a small panel of experts who evaluated how well the questions appeared to measure the areas intended. Second, the instrument was given to a group of 25 people selected because they were comparable to the intended population of Phase 2. This group provided feedback on how well the questions communicated the desired

meaning. An interview format was utilized to determine the clarity of directions and items. Reliability analyses are reported in the Results section.

Following the viewing of the four videotaped sequences, raters completed the Attitude To Blindness Scale (Cowen et. al., 1958). This instrument was given to determine if pre-established attitudes of the raters toward blindness may have influenced the results of the study. The four choice alternatives of this instrument (Strongly Agree; Mildly Agree; Mildly Disagree; Strongly Disagree) were weighted 1, 2, 3, and 4, respectively, when a statement was positive and exactly opposite when the statement was negative. The attitude score was the sum of item scores. (Refer to the Appendix for a copy of this scale). The instruments used in this research were given untitled to avoid alerting the raters to the specific intent of the study.

RESULTS

Demographic Information on Sample. Demographic information the raters in Phase 2 revealed that videotape viewing groups were evenly distributed for sex. Eighty-two percent were between the ages of 18-30 years of age. Forty-nine percent had some college coursework. The majority (96%) indicated they had no blind family members.

Instrument Reliability. Internal consistency reliability coefficient estimates were computed for the two instruments

administered to the sample, the Attitude To Blindness Scale (ATBS) and the Attribute Projection Instrument (API). Reliability coefficient estimates were also computed for the three subscales of the Attribute Projection Instrument: Social Competence, Intelligence, and the Ability to Compete as an Adult in a Sighted World. As is shown in Table 3, the Attitude To Blindness Scale had a high internal consistency, Cronbach's alpha= .85. These data are comparable to previously reported reliability estimates (Cowen et. al., 1958). The internal consistency reliability coefficient for the Attribute Projection Instrument was high for the full scale, Cronbach's Alpha= .95, and similarly, for Subscales 1, 2 and 3, Cronbach's Alpha= .93, .81, and .84, respectively.

Insert Table 3 about here

Video Group Comparisons on Attitude To Blindness Scale (ATBS). A one-way analysis of variance indicated that the four videotape viewing groups evaluating the videotaped sequences of the visually impaired children did not differ in their attitude toward blindness, ($F = (3,156)\ .65$, $p > .05$).

Analyses of Raters' Evaluations of Level of Social Competence, Intelligence, and Ability to Compete. Means and standard deviations for viewing groups by Subscales 1, 2 and

3 and Condition 1 (pre-training) and Condition 2 (post-training) are presented in Table 4.

Insert Table 4 about here

It is useful to keep in mind that the 5-point scale employed in this study used 1 as a measure of the most desirable trait, 3 as an average rating, and 5 as a measure ofthe least desirable trait. Consequently, the lower the rating, the more positive the assessment of a trait.

An analysis of variance performed on the data for Subscale 1, Social Competence, yielded significant main effects for Tape, $F(3, 159)=3.08$ $p<.05$, Training Condition, $F(1, 156)=325.42$ $p<.0001$, and a significant first-order Tape by Training Condition interaction effect, $F(3, 156)=6.07$ $p<.01$.

An analysis of variance performed on the data for Subscale 2, Intelligence, yielded significant main effects for Tape, $F(3, 159)=4.29$ $p<.01$, Training Condition, $F(1, 155)=181.27$ $p<.0001$, and a significant first-order Tape by Training Condition interaction effect, $F(3, 155)=12.03$ $p<.001$.

An analysis of variance performed on the data for Subscale 3, Ability to Compete with Sighted as Adult, yielded significant main effects for Tape, $F(3, 159)=6.59$ $p<.01$,

Training Condition, $F(1, 156)=177.37$ $p < .0001$, and a significant first-order Tape by Training Condition interaction effect, $F(3, 155)=8.88$ $p < .0001$.

Examination of a graph of cell means across the two training conditions (Condition 1 and 2) revealed a disordinal interaction. This effect seems to have occurred due to the exceedingly high (positive) ratings given to certain children in different training conditions. Post hoc comparisons using Scheffé multiple comparison tests showed significant differences among cell means in viewing groups 1 and 4 and 1 and 3 at the Condition 1 (pre-training) level. Significant differences were also noted among cell means for video groups 3 and 2, and groups 3 and 4 at the Condition 2 (post-training) level.

Personal/Projective Questions. Questions 12 through 15 of the Attribute Projection Instrument were analyzed separately from Questions 1 through 11. Separate analyses were conducted because these questions dealt with a more personal evaluation of each child and/or asked the raters to project future functioning based on the limited behavior sample provided in the videotaped sequences.

Question 12 asked the raters to estimate how successful they thought a child was in school. Question 13 asked raters to estimate the number of friends a child might have. Question 14 questioned the raters' opinions about the child's

success as an adult in a sighted world. Finally, in question 15 raters were asked to state how positive or negative their feelings toward blindness would be if the child they observed were their child. An analysis of variance performed on the data for these questions yielded significant main effects for Tape, $F(3, 159)=6.54$ $p < .01$, Training Condition, ($F= (1, 156)$ 167.53, $p < .0001$), and a significant first-order Tape by Training Condition interaction effect, $F(3, 156)=1.35$ $p < .01$.

Examination of a graph of cell means across the two training conditions (Condition 1 and 2) revealed disordinal interaction. The influences previously discussed with the main hypotheses of this study appeared to be operating.

An analysis of variance performed on the total items of the Attribute Projection Instrument yielded main effects for Tape, $F(3, 159)=4.70$ $p < .01$, Training Condition, $F(1, 154)=278.99$ $p < .0001$, and a significant first-order Tape by Training Condition interaction effect, $F(3, 154)=8.36$ $p < .0001$. In fact, a series of analyses of variances conducted on every item of the Attribute Projection Instrument found significant main effects for the Training Condition, $p < .0001$. The descriptive data of this effect is represented graphically in Figure 1. The significant Tape by Training Condition interaction revealed a disordinal interaction, explained by influences addressed earlier.

Insert Figure 1 about here

Analysis of means by child displayed in Table 5 reveal a consistent trend toward improved assessment of a

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Table 5 about here

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child's social skills, intelligence, and competitiveness as an adult in a sighted world in the post-training condition, Condition 2. These results were found even though children were rated as possessing different levels of competence when they were shown in the pre-training sequence.

Evidence of an order effect operating on the videotaped sequences was noted. In three tapes, the first child viewed was in the post-training condition, Condition 1. In each case, being shown first in the post-training condition produced a slightly lower (more positive) mean score than when the same children appeared in the post-training condition in a different order on other videotapes.

Open-Ended Question, Item 16. Item 16 of the Attribute Projection Instrument asked respondents to write briefly what it was about the child they observed that caused them to respond the way they had on the previous 15 items. Many of the write-in responses formed natural descriptive clusters.

Responses that occurred less than ten times were not considered representative of group reactions and are not included in tabulated form. A summary of the most commonly written comments for each condition, and their frequency for Child 1, 2, 3, and 4 are organized in the following tables.

Insert Table 6 about here

Table 6 shows that when child 1 was shown at the pre-training skill level she was described as introverted and giving a negative impression based on her posture. Yet when she was shown at the post-training skill level she was referred to as interested and well mannered.

Insert Table 7 about here

Table 7 reveals that Child 2 was noted as not responding well to the questions, shy and as not being very intelligent in the pre-training videotape sequence. It is noteworthy that in the post-training sequence he is described by opposite terms when he displayed gaze direction. He was referred to as polite, friendly and as an above average student. The use of gaze direction appeared to assist Child 2 in presenting himself as brighter, more alert.

Insert Table 8 about here

Table 8 demonstrates that Child 3 was protrayed as a withdrawn and considerate child in the pre-training sequence. She was regarded as outgoing and above average in her skills in communicating with adults when she manifested gaze direction.

Insert Table 9 about here

Table 9 shows that Child 4 presented a picture of a "closed in" child who was intelligent but slightly nervous in the pre-training condition. In the post-training condition she was seen as being very good at establishing contact with interviewers, as well as being open and outgoing.

The responses to the open-ended question reflected a dramatic change in how a child was perceived in the two conditions. Systematically, children without gaze direction were described with negative attributes. The same children when observed with gaze direction were most frequently described with positive attributes. Comments regarding the lack of gaze direction were not common in the pre-training condition. Yet interestingly, the presence of gaze direction, although described in different terminology, was reported as a frequent positive quality of children in the

post-training condition.

DISCUSSION

This study found the use of proper gaze direction in four blind children was perceived by 160 sighted raters as an index of more advanced social skills, higher intellect, and a greater ability to compete in a sighted world as an adult. When the children manifested gaze direction in a conversational situation, they were assessed as having more self-confidence, better social skills, better expressive skills, as being more polite, more interested in the conversation, more cooperative, more relaxed, and more motivated. Sighted raters also evaluated children with gaze direction as more intelligent, warmer, as having more friends, more successful in school, as more successful as an adult, and as being a more positive blind child to parent.

When the same group of children were shown in videotape sequences without gaze direction, sighted raters gained a less positive impression of their skills, abilities, and social adjustment. These results make a strong statement regarding the way in which the social behavior of some visually impaired children is interpreted by the sighted. All raters evaluated the same children. The only difference was that some raters viewed a videotaped sequence of a child before the child had participated in gaze direction training.

Others saw the same child in a videotaped sequence taken five weeks later after Intensive Gaze Direction Training (Raver, 1984) had been completed. In this training the children were trained to hold their heads up, if they manifested head droop, and to follow the movements of the speaker with their head during conversation.

It is noteworthy that an unanimous effect was found despite unique differences in each child's personality, race, verbal skills, smoothness in which gaze direction was employed, and level of sociability. Three of the children were minorities (one was Black, two were Hispanic). With knowledge of the stereotypes which plague different races and members of different socio-economic groups, and understanding the differences between children that could not be controlled, it is impressive that all children positively influenced the attitudes of the sighted raters when they were shown displaying proper gaze direction.

The strength of this effect could be viewed as a social validity statement. In fact, if no statistical measures had been used, the magnitude of the attitude changes could have been identified from examination of the write-in responses to item 16 of the Attribute Projection Instrument only (see Tables 6-9). Descriptors written about children in the pre-training condition, without gaze direction, tended to describe attributes associated with social isolation,

tension, aloofness and low approachability. Those attributes are congruous with an often reported negative stereotype of the blind (Scott, 1969).

In contrast, comments written about the same children when they employed gaze direction, in the post-training condition, tended to be characterized by positive attributes of openness, alertness, and by references of how the children favorably resembled most children the same age who were not visually impaired. At this skill level the children were generally described as projecting high levels of approachability.

Some raters noted surprise that gaze directon skills could be used at all by the blind. When such comments were made on item 16, the rater often described children shown in the pre-training condition as less social and/or skillful.

Historically, the lack of eye contact has come to convey specific and pragmatic communications to the sighted. A student avoids eye contact with a teacher when he or she does not care to be singled out. It can be more difficult, and at times irritating, to have an effective conversation with someone wearing dark glasses. The lack of gaze direction skills makes some visually limited individuals rigid in their posture and may encourage head droop (head hanging toward the chest). Because of these mannerisms the visually impaired can appear to project less responsiveness in their faces.

The absence of expected social signals, such as eye contact and smiling, tend to deprive sighted interactants of the contingent feedback necessary to maintain effective communicative interaction.

A large theoretical body of literature exists which suggests a growing awareness that much of communication between people is mediated by nonverbal cues. In fact, in a two-person conversation, Knapp (1972) has suggested that verbal comments carry only 35% of the social meaning. The remainder seems to be carried by nonverbal elements. Dion, Berscheid and Walster (1972) discovered that young adults conform to an attractiveness stereotype. They found that attractive persons were perceived as warmer, more responsive, sensitive, kind, interesting, strong, poised, sociable, and outgoing than persons of less physical attractiveness. Since physical and nonverbal properties of a person are involved in any assessment of that person's competence and approachability, it would seem necessary that the social repertoires of the visually impaired be trained to more closely approximate the social expectations of the sighted.

Sommers (1944) stated that the personal and social adjustment difficulties of blind adolescents are due to the social attitudes and conditions surrounding the blind, rather than the disability itself. The results of this investigation suggest that the introduction of subtle social

skills, like gaze direction, may have a profound impact on the sighted's attitude toward interacting with the blind. Although it is clear that formidable attitudinal barriers exist that limit opportunities for the blind, it may be that specialized social training could work to amend some of the strained interaction that occurs between the sighted and visually impaired. It appears that by employing gaze direction the visually impaired may communicate qualities or attributes that allow the sighted to evaluate social interaction with them as more normalized. The problem of strained interaction between the sighted and visually impaired may be, in part, a function of a lack of precise training in necessary social patterns which the sighted have come to expect.

The author plans to address future research toward exploring the effects of gaze direction training on face-to-face social interaction with different age groups and its impact on individuals with direct experience with the blind. To effectively expand the social milieu of the visually impaired child, it may be necessary to train gaze direction skills as faithfully as academic skills are now being taught. The need for a concensus on systematic social training for all visually impaired children and adults is evident. The results of this study seem to suggest that the more the behavior of this population resembles the sighted,

the greater the opportunities for successful integration which could lead to more mainstreamed life experiences. By using behavioral training techniques as tools to train skills such as gaze direction, it may be that the genuine qualities of more visually impaired children will come to be more accurately perceived by the sighted.

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Table 1

INTERVIEW QUESTIONS, PHASE 1

1. What grade are you in?
2. What's your favorite subject in school?
3. Who is your best friend in school?
4. What makes your best friend your favorite friend?
5. Do you have any brothers or sister? How many?
6. Do you have any pets? What's their names?
7. What's your favorite song?
8. What's your favorite thing to eat?
9. What's more fun, school or summer vacation?
10. Why is ---------- more fun?
11. Who is your favorite singer?
12. What do you like most about your birthday?
13. What do you really like to do?
14. What do you hate to do?
15. What do you want to be when you grow up?

Table 2

ATTRIBUTE PROJECTION INSTRUMENT

QUESTIONAIRE

Code 0 2 0 1 0 2 0 2

Subject Number -- -- --

Part I

Judging from the situation just observed, indicate your opinion of this child by selecting the response from the scales provided that best represents your opinion. Place your response to items 1-15 on the answer sheet provided by darkening the number which corresponds to your response.

There are no right or wrong answers. Answer according to your opinion drawn from the behavior sample provided in the video tape. It is important that you answer all items of this instrument.

Section A: For items 1-10, darken bubble "1" if you perceive this child's skills as better than most children his/her age; darken "2" if you perceive this child as slightly better than most children his/her age; darken "3" if you perceive this child to be the same as most children his/her age; darken "4" if you perceive this child as slightly worse than most children his/her age; and darken "5" if you perceive this child to be worse than most children his/her age in each category specified.

Scale: 1--Better than most children his/her age
2--Slightly better than most children his/her age
3--Same as most children his/her age
4--Slightly worse than most children his/her age
5--Worse than most children his/her age

1. This child's self-confidence is: 1 2 3 4 5

2. This child's ability to interact effectively is: 1 2 3 4 5

3. This child's ability to express himself effectively is: 1 2 3 4 5

4. This child's politeness is: 1 2 3 4 5

5. This child's interest in the conversation is: 1 2 3 4 5

6. This child's cooperativeness is: 1 2 3 4 5

7. This child's ability to relax is: 1 2 3 4 5

8. This child's social skills are: 1 2 3 4 5

9. This child's motivation is: 1 2 3 4 5

Section B: For items 11-14, use the scale provided below each item. Darken the number that corresponds to your response on the answer sheet provided.

10. This child's intelligence is:
1--Higher than average
2--Slightly higher than average
3--About average
4--Slightly below average
5--Below average

11. This child's warmth is:
    1--Warmer than most children his/her age
    2--Slightly warmer than most children his/her age
    3--Same as most children his/her age
    4--Slightly less warm than most children his/her age
    5--Less warm than most children his/her age

12. This child's success in school probably is:
    1--Well above average
    2--Slightly above average
    3--Average
    4--Slightly below average
    5--Well below average

13. This child probably has the following number of friends:
    1--A very large group of friends
    2--A large group of friends
    3--An average number of friends
    4--A small group of friends
    5--Very few friends

14. This child's success in a sighted world as an adult probably will be:
    1--Better than most blind children
    2--Slightly better than most blind children
    3--About the same as most blind children
    4--Slightly less than most blind children
    5--Less than most blind children

Part II

15. If this were my child my attitude toward blindness probably would be:
    1--Very positive
    2--Mildly positive
    3--Not positive, not negative
    4--Mildly negative
    5--Very Negative

16. Write briefly on the back of this questionaire what it was about this child that made you respond the way you have to Questions 1 through 14.

Table 3

Reliability Coefficients for Attitude To Blindness Scale and Attribute Projection Instrument

Instrument	Number of Items	Cronbach's Alpha
ATBS	30	.8494
API:		
Full Scale	15	.9546
Social	7	.9264
Intelligence	3	.8082
Competitiveness	3	.8392

Table 4

Means and Standard Deviations for Viewing Groups by Subscale and Condition

Viewing Group	N	Cond. 1 $\bar{X}$	Cond. 1 S.D.	Cond. 2 $\bar{X}$	Cond. 2 S.D.
Subscale 1: Social Competence					
1	40	3.020	.641	2.157	.587
2	40	3.125	.418	2.420	.335
3	40	3.209	.419	1.936	.515
4	40	3.157	.459	2.348	.534
Subscale 2: Intelligence					
1	39	2.970	.620	2.517	.675
2	40	3.208	.514	2.654	.369
3	40	3.437	.507	2.108	.545
4	40	3.383	.437	2.567	.394
Subscale 3: Ability to Compete					
1	39	2.902	.646	2.337	.567
2	40	3.104	.495	2.658	.415
3	40	3.283	.522	2.096	.530
4	40	3.367	.431	2.450	.478
Total					
1	39	2.946	.623	2.243	.568
2	40	3.122	.451	2.498	.318
3	40	3.252	.443	1.983	.476
4	40	3.235	.451	2.378	.439

Note: The lower the score, the more positive the attribute.

Table 5

Mean Ratings and Differences by Condition, Subscale, and Child

Child	Condition 1	Condition 2	Difference
Subscale 1: Social Competence			
1	3.3236	2.4303	-.8933
2	3.4375	2.7607	-.6768
3	3.0285	2.0250	-1.0036
4	2.7070	1.6446	-1.0624
Subscale 2: Intelligence			
1	3.3162	2.6500	-.6662
2	3.8565	3.1601	-.6963
3	3.1434	2.3291	-.8142
4	2.7004	1.7004	-.9991
Subscale 3: Ability to Compete			
1	3.1973	2.6125	-.5848
2	3.7906	3.0086	-.7819
3	2.9957	2.1645	-.8312
4	2.7046	1.7662	-.9384
Total			
1	3.2583	3.2568	-.7885
2	3.5888	2.8378	-.7510
3	3.0435	2.1088	-.9346
4	2.6719	1.7280	-.9438

Note: The lower the score, the more positive the attribute.

Table 6

Most Frequent Write-In Responses to Item 16 of API--Child 1: Pre-and Post-Training Conditions

Pre-Training Condition Comments:		Post-Training Condition Comments:	
Introverted; wanted conversation to end	35	Turned head toward interviewers; showed interest	38
Gave negative impression from appearance of body); posture indicated lack of interest, attention	29	Cooperative, interesting; well mannered	33
		Well adjusted; a nice child	26
Ill at ease; moved, wiggled in chair	25	Warm, friendly, imaginative	24
Shouted answers in rapid bursts; seemed angry; cold; stubborn	20	Like most children her age	16
		Self-assured	14
Held head down which made it appear that she didn't want to cooperate	19	Intelligent, motivated	14
Defensive responses; a little bratty; rude	18		
Ability to interact poor	14		

Table 7

Most Frequent Write-In Responses to Item 16 of API--Child 2: Pre-and Post-Training Conditions

Pre-Training Condition Comments:		Post-Training Condition Comments:	
Didn't respond well to the questions	35	Other than blindness, seemed like most his age; basically normal	35
Shy, insecure	32	Polite, warm, friendly	34
Low achiever; not intelligent	18	Above average student; achiever; alert	29
Slow to answer questions; hesitated	16	Trouble expressing himself	16
Didn't look at interviewers	16	Turned his head toward interviewers; attentive	16
Probably has small social circle	12	Open, laughed	14
Likeable	11	Shocked to find out he was blind	11
		Shy, insecure	11

Table 8

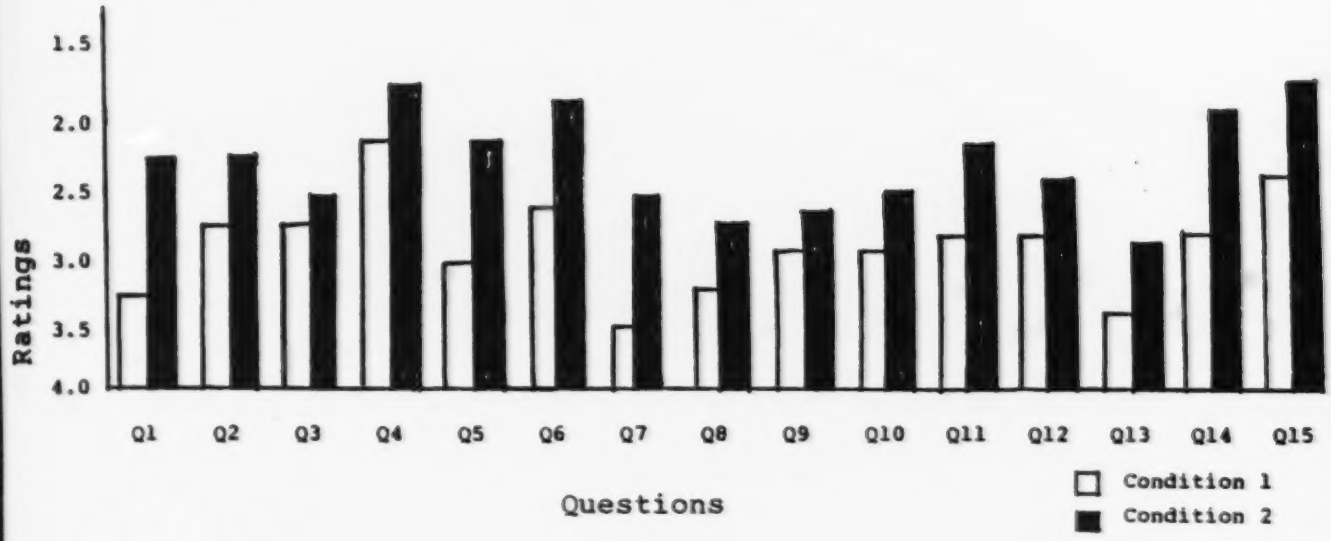
Most Frequent Write-In Responses to Item 16 of API--Child 3: Pre-and Post-Training Conditions

Pre-Training Condition Comments:		Post-Training Condition Comments:	
Shy, withdrawn; lives in an isolated world	35	Friendly, polite, outgoing	48
Friendly, considerate, motivated	21	Positive attitude toward life; happy; well motivated	44
Introverted, unfriendly	18	Above average in communicating with adults	29
Couldn't sit still	13	Socially adept	29
Average 6 year old	15	Innocent, warm personality	14
Wants to learn	13	A bit below average based on appearance; nervous	13
Didn't seem to follow questions easily	11	Very bright	12
Looked straight down or ahead	11		
Very intelligent	11		

Table 9

Most Frequent Write-In Responses to Item 16 of API--Child 4: Pre- and Post-Training Conditions

Pre-Training Condition Comments:		Post-Training Condition Comments:	
"Closed in"; uncomfortable; tense, robot-like	21	Very attentive; directed head toward interviewers; established contact with interviewers	49
Confident and intelligent	20	Showed interest, alert, assertive	35
A little nervous	17	Open and outgoing	32
Paid no attention to speakers; no eye contact	14	Confident; well-adjusted	32
Cold, indifferent; not interested in the conversation	13	Calm, relaxed	29
Shy; no confidence	13	Achiever; brighter than average	28
Same as others her age	11	Warm, friendly, likeable, polite	26



Q1 Self-confidence
Q2 Effective interaction
Q3 Expressive ability
Q4 Politeness
Q5 Interest in conversation
Q6 Cooperativeness
Q7 Ability to relax
Q8 Social skills
Q9 Motivation
Q10 Intelligence
Q11 Warmth
Q12 Success in school
Q13 Number of friends
Q14 Success as an adult
Q15 Attitude toward blindness if your child

Note: The lower the score, the more positive the attribute.

Figure 1. Average Condition 1 Means and Condition 2 Means for Attribute Projection Instrument

APPENDIX

ATTITUDE TO BLINDNESS SCALE

SURVEY

Subject Number -- -- --

Read each of the statements below and then rate them as follows:

1	2	3	4
Strongly Agree	Mildly Agree	Mildly Disagree	Strongly Disagree

Indicate your opinion by filling in the bubble on number "1" if you strongly agree, darkening number "2" if you mildly agree, darkening number "3" if you mildly disagree, and darkening number "4" if you strongly disagree.

There is no right or wrong answer, so answer according to your own opinion. It is very important to the study that all questions be answered. Many of the statements will seem alike but all are necessary to show slight differences of opinion.

1.	A blind person might as well accept the fact that blindness makes people pretty helpless.	(1 2 3 4)
2.	On the whole, blind children seem to be less intelligent than sighted children.	(1 2 3 4)
3.	Blinded people are used to failing in most of the things they do.	(1 2 3 4)
4.	A blind person should not have to meet the same standards as others.	(1 2 3 4)
5.	Blind people are constantly worried about the future.	(1 2 3 4)
6.	Blindness has little or no effect upon intelligence.	(1 2 3 4)
7.	A blind person is not afraid to express his feelings.	(1 2 3 4)
8.	A blind person can never really be happy.	(1 2 3 4)
9.	Most blind people are dissatisfied with themselves.	(1 2 3 4)
10.	A blind person can't afford to talk back to people.	(1 2 3 4)
11.	One can live in a competitive society and still compete successfully without sight.	(1 2 3 4)
12.	It makes me feel a little guilty to know that I can see and others cannot.	(1 2 3 4)
13.	You should not expect too much from a blind person.	(1 2 3 4)
14.	Most blind people feel that they are worthless.	(1 2 3 4)
15.	It is possible to know the beauty of the world without sight.	(1 2 3 4)

16. My attitude towards a blind person would be based more upon his personality than upon the fact that he is blind. (1 2 3 4)

17. Blind people do not have as much initiative as sighted people. (1 2 3 4)

18. It is very difficult to make a blind person change his mind once he has decided on something. (1 2 3 4)

19. It must be bitterly degrading for a blind person to depend so much upon others. (1 2 3 4)

20. Many blind people are economically independent. (1 2 3 4)

21. Blind people are more easily upset than sighted people. (1 2 3 4)

22. Most blind people think and act alike. (1 2 3 4)

23. It's difficult to understand the blind because they keep so much to themselves. (1 2 3 4)

24. There are things worse than being blind. (1 2 3 4)

25. Acceptance of blindness is the same thing as acceptance of anything else in life. (1 2 3 4)

26. The blind adult is not quite as mature or "grown-up" as the sighted adult. (1 2 3 4)

27. Blindness does not change the person any more than any other physical handicap. (1 2 3 4)

28. The blind have as many interests as the sighted have. (1 2 3 4)

29. I feel that blindness is as hard to bear as complete paralysis. (1 2 3 4)

30. A blind person is constantly worried about what might happen to him. (1 2 3 4)

Demographic Information

Indicate your background by marking the response that is most appropriate for you. Please answer all items.

31. My sex is:
    1--Male
    2--Female

32. My age is:
    1--18-30
    2--31-45
    3--46-60
    4--Over 61

33. My educational level is:
    1--High school
    2--High school plus college
    3--College degree
    4--Graduate work or degree

34. My religious affiliation is:
    1--Christain
    2--Jewish
    3--Eastern
    4--Nondetermined

35. My occupation is:
    1--Human services
    2--Business
    3--Student
    4--Medical field
    5--Other

36. Do you have a blind family member?
    1--Yes
    2--No

37. Have you or do you now know a blind person personally?
    1--Yes
    2--No